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RESPONSIVE TESTIMONY OF

MARK C. FURTICK, P.E.

ON BEHALF OF

DOMINION ENERGY SOUTH CAROLINA, INC.

DOCKET NO. 2019-182-E

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A. My name is Mark C. Furtick. My business address is 220 Operation Way, Cayce, South Carolina. I am the Manager of Renewable Energy Programs and Technical Services for Dominion Energy South Carolina, Inc. ("DESC").

Q. ARE YOU THE SAME MARK FURTICK THAT OFFERED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR RESPONSIVE TESTIMONY?

A. The purpose of my responsive testimony is to (i) respond to certain portions of the analyses performed by intervenors in this docket, (ii) respond to certain claims regarding resiliency benefits and provide a brief overview of the challenges that solar generation brings to balancing the DESC system, (iii) discuss lessons learned by performing the cost benefit analysis of the current NEM program (the "Current

NEM Program"), and (iv) recommend how the analyses and results in this docket should be considered when evaluating DESC's upcoming Solar Choice tariff.

Q. ON PAGE 5, LINES 3 THROUGH 12, SELC WITNESS HEFNER STATES THAT A BROAD RANGE OF ECONOMIC IMPACTS—INCLUDING "INDUCED IMPACTS"—SHOULD BE CONSIDERED WHEN EVALUATING NEM'S IMPACT IN SOUTH CAROLINA. DO YOU AGREE?

A. No, I do not. As described by DESC Witness Everett, these "induced benefits" are almost impossible to accurately quantify and have no place when setting quantifiable rates comprising a part of NEM programs. Further, if economic benefits are to be considered at all (including direct and indirect), then they should fit within the parameters set forth by DESC Witness Everett, that is, the values need to reflect the incremental benefits associated with the Solar Choice tariff that can be proven and verified. Although SELC Witness Hefner proposes an estimate which includes a very broad range of purported economic benefits, in reality, the rate-making process requires a much more quantifiable, evidence-based approach. As such, the Commission should certainly not consider induced economic impacts, and should exercise caution when considering other economic benefits, if any.

Q. DO YOU AGREE WITH ORS WITNESS HORII'S RECOMMENDATION ON PAGE 20 LINE 13, THROUGH PAGE 21, LINE 10, THAT "FUTURE

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CONDITIONS" SHOULD BE ACCOUNTED FOR IN MARGINAL COSTS WHEN EVALUATING A SOLAR CHOICE TARIFF?

A. Yes, particularly with the increasing penetration of emerging technologies in the renewable energy market. Things like battery storage and smart inverters are in the market at higher levels than when the Current NEM Programs became effective. As I stated above, DESC is already seeing NEM customers pair storage with their solar generation, and it is reasonable to assume that the use of emerging technologies in the NEM sector will only increase. These technologies will likely result in increased adoption of customer-sited solar generation—which DESC Witness Robinson already predicts to grow steadily over the next ten years. However, as ORS Witness Horii also notes, the increased adoption of customer-sited generation means that the value of each additional MW of solar put to DESC is worth less than the one before it.[1] As such, in evaluating DESC's proposed Solar Choice tariff in Docket No. 2020-229-E, the Commission should consider the wide-ranging impacts that these emerging technologies could have on the incremental value of the customer-sited solar energy, as well as NEM programs in general.

Q. ON PAGE 12, LINES 16 THROUGH 17, SELC WITNESS BEACH NOTES THAT THE USEFUL LIFE OF A SOLAR DISTRIBUTED GENERATION RESOURCE IS 25-30 YEARS. IN YOUR EXPERIENCE, WHAT IS THE USEFUL LIFE OF THESE SYSTEMS?

[1] Direct Testimony of Brian Horii p. 21.

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A. Typically, these systems are expected to have a useful life of 20 years—with the understanding that there will be some annual degradation prior to the end of that 20-year period. When you factor in technology advancements that are not captured today, along with annual output degradation, this could result in equipment becoming less efficient than the technology available at some point in the future. This expected life is also supported by the fact that the term of most leases and loans for the customer-sited solar generation on the DESC system coincides with that estimate. Any assumption in a cost-benefit analysis that the useful life is beyond 20 years could lead to inflated benefits.

Q. ON PAGE 28, LINE 12, THROUGH PAGE 29, LINE 20, SEIA/NCSEA WITNESS BARNES ALLEGES THAT SOLAR NEM SYSTEMS PROVIDE A RESILIENCY BENEFIT THAT SHOULD BE CONSIDERED WHEN DEVELOPING NEM PROGRAMS. HAVE THE SOLAR NEM SYSTEMS INTERCONNECTED ON THE DESC SYSTEM CONTRIBUTED TO OVERALL GRID RESILIENCY FOR DESC'S CUSTOMERS?

A. No. In fact, the vast majority of customer-sited solar generation on the DESC system is "grid-tied," meaning that the solar NEM system will not produce energy if DESC is not supplying power to that system. Currently, less than 1% of NEM customers have energy storage which could power that individual customer's critical needs during an outage. This means that during an outage, a majority of NEM systems do not provide any benefits to their neighbors or the overall DESC system.

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Although SEIA/NCSEA Witness Barnes goes on to note that these systems could provide benefits during "extreme weather events,"[2] logic would indicate that is simply not that case given that these weather events—aside from simply causing widespread outages—could result in major damage to roofs and homes, which typically render the customer-sited generation inoperable. Not only does SEIA/NCSEA Witness Barnes not provide adequate support for this claim, but he also omits a key perspective from his resiliency analysis—that of DESC crews working to restore power during an outage. Indeed, these customer-sited generation systems actually complicate the restoration process because crews must take additional steps to follow DESC safety rules for isolating the crew from the possibility of backfeed and injury from the solar generators interconnected to the lines they are working on. Therefore, any impact that the resiliency benefits have upon ratemaking, if any, should be verifiable, quantifiable, weighed against costs, and evidence-based.

Q. PLEASE DESCRIBE HOW UTILITY-SCALE SOLAR AND ROOFTOP SOLAR IMPACT DESC'S ABILITY TO BALANCE ITS SYSTEM ON A DAILY BASIS.

A. DESC has a high penetration of utility-scale, solar arising from qualifying facilities ("QFs") under PURPA—specifically 863 MW as of 9/30/20 (relative to DESC's all-time peak of 4970 MW). Adding more variable, NEM solar generation

[2] Direct Testimony of Justin R. Barnes p. 29, line 11.

with the same supply source does not provide system balancing benefits and may further compound DESC's challenge to balance variable solar generation at higher penetration levels. Further, on mild shoulder days, NEM solar will increase the likelihood of curtailing much lower cost utility-scale QF solar resulting in additional costs to DESC customers. The Commission, when analyzing individual requirements under Act 62, must consider the ripple effect and how each docketed matter impacts the other.

Q. ON PAGE 4, LINES 7 THROUGH 9, ORS WITNESS RUOFF NOTES THAT "EVEN FOR A LOWER INCOME HOMEOWNER, ROOFTOP SOLAR IS BEYOND FINANCIAL REACH." WILL DESC EVALUATE SOLAR OFFERINGS TAILORED TOWARD LOW-INCOME CUSTOMERS?

A. Yes. In support of Act 62's goal of "expand[ing] the opportunity to support solar energy and support access to solar energy options for all South Carolinians,"[3] DESC will evaluate offerings for lower-income customers given that rooftop solar, inherently, is not a product that lends itself to lower-income customers. However, community solar and other emerging programs more naturally lend themselves to lower-income customers who may not own their home or have a roof suitable for solar. In fact, DESC's Low-Income Community Solar offering sets aside a dedicated 1,000 kW of solar capacity for residential customers with household incomes equal to or less than 200% of the

[3] S.C. Code Ann. § 58-41-30 (A).

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current Federal Poverty Guidelines established by the U.S. Department of Health and Human Services. This program is fully subscribed, and is provided at no cost to the customer. Act 62 does not require the Commission to address these issues in this docket, but it may factor into the Commission's upcoming evaluation of DESC's proposed Solar Choice tariff to ensure that any such tariff eliminates cost shift and subsidization to the "greatest extent practicable."[4]

Q. HOW DO YOU RECOMMEND THE COMMISSION UTILIZE THE ANALYSIS OF CURRENT NEM PROGRAMS IN THIS DOCKET WHEN EVALUATING FUTURE NEM TARIFFS?

A. I think there are several key results of the analyses performed in this docket that the Commission can leverage when evaluating future NEM tariffs, including DESC's Solar Choice tariff under Act 62. Initially, and as evidenced by DESC Witness Everett's testimony, there is a certain amount of cost-shifting and subsidization that occurs under the Current NEM Programs due to the usage profile of NEM customers. DESC Witness Everett describes this cost-shift as a "value to one group of customers that is paid for by another group of customers."[5] In this case, the value is provided to NEM customers and paid for by non-NEM customers. The direct testimony in this docket evidenced a consensus on this point, and described

[4] *See id*.
[5] Direct Testimony of Margot Everett p. 19, lines 8-9.

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precisely why NEM programs lend themselves to cost-shift and subsidization.[6] This cost-shift is likely part of the reason why rooftop solar has seen such a dramatic expansion under the Current NEM Programs. As I stated in my direct testimony, DESC currently has almost 11,000 customers that take service under an NEM tariff, resulting in an aggregate capacity of 88,327 kW of generation. These numbers rank DESC's service territory among the top in these categories in the Southeast. However, in ushering in the new era of NEM under Act 62, the Commission is required to establish a Solar Choice Program that differs from those established under Act 236—a key difference is that the Commission must eliminate this cost-shift and subsidization "to the greatest extent practicable."[7]

Pursuant to the Commission's Directive issued in this docket on August 26, 2020, the parties in this docket presented many NEM "best-practices" from other jurisdictions which can be utilized to achieve this key goal of Act 62. DESC Witness Everett and Duke Witness Huber provided the Commission with a survey of numerous states that have implemented rate structures that could be used to eliminate cost-shift and subsidization, such as time of use rates and minimum bills.[8] With respect to time of use rates, Act 62 expressly contemplated "time-variant pricing" as a mechanism by which costs to serve NEM customers can be more fairly allocated, and ORS Witness Horii—among others—echoed the same.[9]

[6] For example, ORS Witness Horii's report "includes an estimate of the value of customer generators cost shift." Direct Testimony of Brian Horii p. 4, line 8.
[7] S.C. Code Ann. § 58-40-20 (A)(3).
[8] *See* Direct Testimony of Margot Everett p. 36; Direct Testimony of Lon Huber p. 8.
[9] Direct Testimony of Brian Horii p. 40.

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Therefore, it is clear that achieving the goals within Act 62 for the Solar Choice program requires a more creative rate structure than that within the Current NEM Programs. As DESC Witness Everett points out, in evaluating what rate structures may be appropriate for DESC's Solar Choice tariff, the Commission should fully understand the costs and benefits of NEM programs through the use of robust analytics, and then implement a program that ensure those costs are allocated to customers creating such costs. This approach also aligns with the process set forth by ORS Witness Horii.[10]

As such, DESC respectfully requests that the Commission order that (i) the current NEM tariff utilized simplified rate making tools to establish NEM in SC; (ii) DESC's initial NEM plan under Act 236 resulted in approximately 11,000 NEM customers; (iii) the Commission will leverage DESC's analyses in this docket when evaluating DESC's proposed Solar Choice tariff in Docket No. 2020-229-E and that all benefits and costs that are used to assess the program and determine any valuation should be measurable and quantified with a level of robustness as all of the costs when they appear on the customer's bill; (iv) Act 62 requires more sophisticated rate-making tools for the Solar Choice program than those under the Existing NEM Programs; and (v) the Commission will evaluate time-variant pricing, as well as a broad range of rate-making tools that were provided in this docket to better align costs to avoid cost-shifts and subsidization, in considering DESC's upcoming Solar Choice tariff.

[10] *See id*.

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Q. DOES THIS CONCLUDE YOUR PRE-FILED RESPONSIVE TESTIMONY?

A. Yes, it does.

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